

Attachment 13



▪ report

**Mangawhai Eco Care:
Proposal to Investigate
reduced cost Reuse
Options.**

▪ report

Mangawhai Eco Care: Proposal to Investigate reduced cost Reuse Options.

Prepared for
Kaipara District Council

By
Beca Carter Hollings & Ferner Ltd/
EPS Consultants International Pty Ltd.

January 2008

Revision History

Revision N°	Prepared By	Description	Date
A	Peter Elliott	Draft	January 2008

Document Acceptance

Action	Name	Signed	Date
Prepared by	Peter Elliott		
Reviewed by			
Approved by			
on behalf of	Beca Carter Hollings & Ferner Ltd		

Table of Contents

Summary	1
1.1 Purpose of the Report	2
1.2 Project Background	2
1.3 Scope	2
2 Strategy	3
2.1 Initial Discussions with Potential End Users	3
2.2 High Level Assessment of Costs	3
2.3 Potential Alternatives	4
3 Proposal for Further Investigations	5
3.1 Previous Work	5
3.2 Proposed Work for this Stage	5
3.3 Budget	6
4 Recommendations.....	7

Appendices

Appendix A – RMCG Report May 2006

Summary

The Mangawhai EcoCare Project incorporates the development of a Water Reclamation facility with the Council purchasing a farm on Brown's Road as a strategic site to provide long term security in being able to sustainably reuse all reclaimed water, notwithstanding the intent was to investigate users of the reclaimed water.

These others users will be expected to lower the costs of the project to council and the community via commercial agreements to lease the farm site and or defer and or reduce capital expenditure requirements for the final disposal/ reuse site.

An expression of Interest (EOI) was advertised for use of the reclaimed water in November 2007 with four formal responses received including a submission from the Mangawhai Golf Club and a number of local farmers. Preliminary discussions have been held with these respondents and it is now proposed to undertake some preliminary investigations using the services on RMCG Consultants to prepare a report to advise Council and the respondents on appropriate commercial benefits to be derived from the reclaimed water at Mangawhai.

The further investigations are estimated to cost up to \$75,000 and have the potential to save Council some \$500,000 in capital expenditure on the final disposal site through downsizing and or deferring the construction of the winter storage dam and through the users of the reclaimed water contributing to the cost of the irrigation system.

The paper proposes a strategy to assess the EOI's received and establish a basis for Council to consider moving forward to formal agreements.

Introduction

1.1 Purpose of the Report

This report has been prepared to outline the proposed approach to development of alternative reuse options for the Mangawhai Eco Care treated effluent. These options provide an opportunity to reduce costs of the Eco Care project and ensure that the sustainability of the project is further enhanced by extending the estimated life of the Council owned farm.

The report does not specifically address the leasing of the farm although this is likely to be an outcome of any commercial negotiations arising from the adoption of this report.

1.2 Project Background

The Council has purchased the farm at Brown's Road to use as a strategic final reuse site for the EcoCare project. The intention was to seek Expression's of Interest (EOI) from interested parties to lease the farm and or take reclaimed water to provide commercial benefits to the project and therefore reduce the overall costs of the project to Council and the community.

An EOI was advertised in November 2007 for use of the reclaimed water and for the lease of the farm. Four formal responses have been achieved including Mangawhai Golf Club, and local farmers.

The EOI advised that:

- Council and Earth Tech (the contractor) were currently developing the EcoCare project to provide wastewater services to the community of Mangawhai.
- Council had purchased a farm at Brown Road as a site for a winter storage dam and also for irrigation using reclaimed water in the summer months.
- Reclaimed water would not be available until the summer of 2008/09.
- Reclaimed water could be made available for use in various locations:
 - In the area of the wastewater treatment plant in Thelma Rd., Mangawhai,
 - anywhere adjacent to the transfer pipeline between the wastewater treatment plant in Thelma Rd and the farm at Brown Road; and
 - generally in the area surrounding the farm.

1.3 Scope

The scope for the work proposed by this report is as follows:

- Specialist investigation of the farms and Mangawhai Golf Course to establish a commercially balanced position relative to reuse which benefits both the end users and Council;
- Subsequent negotiations of the broad scope of possible reuse agreements with the various potential end users.

Later works are envisaged (subject to a satisfactory conclusion of this Stage) involving detailed survey and Consent preparation works, and assistance to the end users with gaining Consents for the works.

2 Strategy

2.1 Initial Discussions with Potential End Users

A number of preliminary discussions have been held with parties who expressed interest in the use of treated wastewater. These discussions have been undertaken on the basis that any reuse must be of benefit to Council in reducing costs of the Eco Care project. The discussions have been focussed on the concept that the end users must be prepared to assist with the provision of infrastructure in some way in order to achieve this.

The strategy proposed to build on this is for Council to assist by undertaking some analysis which will provide a sound basis for developing concepts which:

- Benefit the end user commercially and in a sustainable manner;
- Benefit Council (and the broader Mangawhai community) by reducing overall project costs and extending the life of the Council owned farm.

Experience with reuse projects in other locations is that unless a “win/win” situation is developed, reuse will fail over time.

Discussions have also been held with Bygraves and Anderson regarding leasing of the Council farm. They provided a joint proposal and have offered an initial 5 year lease. A separate recommendation will be made in relation to the farm lease. However, no other suitable offers were received. It is considered important to combine negotiations on the lease of Council’s farm with negotiations with Bygraves regarding reuse on his farm otherwise conflicting commercial issues may arise.

2.2 High Level Assessment of Costs

The following costs outline the present capital cost position relative to the agreed “Guaranteed Maximum Price” position in relation to transfer and reuse infrastructure, which part of the existing Contract with Council. These items are noted in the Earth Tech Contract as being capable of removal from the Contract at Council’s election with no penalty to Council. If attractive alternative arrangements are developed prior to next summer, Council can therefore order the deletion of these works from Earth Tech’s Contract.

It is not in Earth Tech’s interests to remove these items from the Contract and for this reason, this paper proposes that the responsibility for investigating alternatives rest with Council. It is also anticipated that these costs will be lower overall if this work is undertaken by Council rather than by Earth Tech. The current Earth Tech Contract acknowledges this right.

The amounts in the Earth Tech Contract which are covered by this arrangement are detailed in the following table:

ITEM	FIXED	EARTH TECH FEE	VARIABLE		GMP
			BASE COST	CONTINGENCY AMOUNTS	
Transfer Pipeline	\$3,100	\$447,726	\$ 2,772,986	\$ 135,572	\$3,359,384
Storage Dam	\$ -	\$423,497	\$ 2,611,207	\$ 121,031	\$3,155,735
Irrigation	\$ -	\$ 85,096	\$ 522,862	\$ 26,143	\$ 634,101

The significant items in the above table are as follows:

- Earth Tech Fixed Charges and Fees

These amounts cover the work necessary to undertake detailed design, project management, risk, overheads etc. These costs could be reduced to the extent to which Council undertakes the alternative work.

- Base Costs

These amounts are the base construction costs which are fixed within Earth Tech's Contract for actual construction works. It may be possible to reduce these costs under the competitive sub contractor GMP process within the Contract however they have already been substantially market tested on a competitive basis. The storage dam costs on the Council farm are high due to the geotechnical difficulties of the site. In addition, the irrigation costs are for construction companies to fully complete the works. The transfer main costs are for a pipeline sized to transfer all treated wastewater to the Council farm. There may be some potential to reduce the pipeline size if long term reuse arrangements can be agreed with parties along the pipeline route.

- Contingency Amounts

These are effectively allowances for unknowns or sub contract variation claims which may or may not be used wholly or in part under the GMP Contract arrangements.

2.3 Potential Alternatives

Bygraves Farm immediately adjacent to the Council farm is considered to offer the potential to provide the majority of benefits.

Bygraves have also just purchased another farm adjacent to their property (Brunt's farm) and through which the present transfer pipeline is located. It should be noted that Bygraves and Anderson have also jointly offered to lease and operate the Council owned farm.

Bygraves has extensive existing areas of his main farm under irrigation and strongly supports the use of irrigation for dairy. He has indicated that he is very interested in using the reclaimed water but requires assistance with development of potential irrigation options and Consent arrangements.

He also has a potential site on his property for a storage dam which may offer a better (and lesser cost) alternative than locating the dam on the Council owned property. This location was also previously identified by Earth Tech as an option but they did not pursue it due to

their need for long term surety and the expected time difficulties in finalising an arrangement with Bygraves.

A number of other potential users (including the Golf Club) would further enhance the alternative arrangements should an arrangement with Bygraves be developed. However, these, on their own, appear to offer little advantage.

Until the proposed investigation works are completed, the potential savings are difficult to estimate. However, it is expected that there are potential Project savings of in excess of \$500,000 which may be achievable (inclusive of engineering fees).

3 Proposal for Further Investigations

3.1 Previous Work

During the tendering and Consent preparation work for the project, Earth Tech undertook substantial work in assessing options. One of their main sub consultants in advising on reuse options was RMCG, a specialist Australian irrigation and business consultant.

EPS have long experience with RMCG and they are considered the leading specialists in this area by Australian Government bodies as well as major private sector companies.

Earth Tech are aware that we have approached RMCG about this further work and they are happy that the previous experience and knowledge of RMCG can be further utilized for investigation of the reuse options. In addition, due to the obligations that Earth Tech have under their Contract, it is important that they have confidence in whatever might be negotiated for alternative reuse arrangements.

A copy of the RMCG report (excluding appendices) previously completed for Earth Tech is attached for reference. The appendices have not been included due to their length and technical nature.

That report included in its recommendations, the further investigation of these alternative options

3.2 Proposed Work for this Stage

It is proposed for Council to engage RMCG directly, under the supervision of the EPS Eco Care Project Director, Peter Elliott, to undertake the following work:

- Milestone 1:

Arrange for Bill Bygraves (and others potential end users) to visit Victoria (possibly at their own expense) in early February and visit Cobden/Stanhope/Echuca/Goulburn Valley/Numurkah with Rob Rendell of RMCG to inspect various sites where reuse and different types of irrigation are undertaken. This would assist their understanding and also they would see Bonlac operations (a Fonterra Company) incorporating reuse for dairying purposes.

(Proposed timing early February).

- Milestone 2:

Rob Rendell will visit Mangawhai and inspect present irrigation arrangements/farms/golf course and obtain information regarding present commercial and irrigation arrangements. He will also undertake discussions with Fonterra (NZ) to refine the present data measurement differences between Australian and New Zealand standards and clearly define actual requirements (this could potentially lead to WWTP savings).

(Proposed timing late February/early March)

- Milestone 3:

RMCG to prepare a report/recommendations, suitable for both Council and the various potential end use parties (this may mean multiple slightly different reports). This would include estimates of appropriate water usage for each case; Consent and future management requirements; and high level estimates of cost for all on farm (or on golf course) irrigation infrastructure options.

(Proposed timing late March)

The focus of these investigations would be on what would be the best for the farmers/golf course as well as establishing a position as to what would be commercially attractive to them while at the same time achieving maximum savings for Council relative to the present Earth Tech costs for storage and irrigation on the Council owned farm. This would recognize that keeping maximum irrigation availability for future expansion on the Council farm as a strategic position is a critical issue. This would be the lowest risk position as it is important for farmers to achieve benefits or sustainable agreements will not be achievable.

- Milestone 4:

Beca/EPS will review the RMCG report and undertake further commercial negotiations with the potential end users to establish broad concepts to bring back to Council.

This report back to Council would include an analysis of potential cost savings in relation to the option of continuing with the complete works on the Council farm. Should the potential cost savings be worthwhile, the recommendation would include whether further works (surveys and detailed work, assistance with agreements, assistance with farmers/golf club to achieve Consents, etc) are worthwhile. In addition, recommendations would be included regarding the progression of geotechnical and design analysis of any proposed storage dam in the alternative location on the Bygraves property. It is envisaged that any proposal in this regard would involve a long term lease of the land area on which the storage dam would be constructed.

(Proposed timing May Council meeting)

3.3 Budget

The proposed budget for this Stage of the work is as follows:

- | | |
|------------------------------------------------------------------------------|----------|
| • RMCG investigations and report (Milestones 1 to 3 inclusive): | \$50,000 |
| • Beca/EPS management and negotiations of RMCG, and delivery of Milestone 4: | \$25,000 |

4 Recommendation

That Council approves the commissioning of Beca/EPS International and RMCG to undertake an initial analysis and provide recommendations for the following:

- Specialist investigation of the farms and Mangawhai Golf Course to establish a commercially balanced position relative to reuse which benefits both the end users and Council;
- Subsequent negotiations of the broad scope of possible reuse agreements with the various potential end users.

- Appendix A

RMCG Report May 2006